



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/621,404

07/18/2003

Sadaji Katogi

Q76523

2814

21171

7590

12/15/2006

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

PICKARD, ALISON K

ART UNIT

PAPER NUMBER

3673

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/621,404	Applicant(s) KATO ET AL.	
	Examiner Alison K. Pickard	Art Unit 3673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,8-10,12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5,8-10,12 and 13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Otto (4,770,548).

Otto discloses an assembly comprising an outer member 2 with raceways 4, and inner member 8 with raceways 10, rolling elements 16, and at least one sealing member B. The sealing member has a plurality of sealing lips 34 and 36 extending toward a sealing surface 38 on the inner member. One of the lips 34 extends axially inwardly of the working space and is a non-contact sealing lip leaving a gap 44 between a free end face and the sealing surface that permits air flow while preventing lubricant from exiting the working space and provides a labyrinth sealing effect under relative motion. The gap is also annular (because the edge of the lip never touches the shaft) and at portions, has a radial size that gradually increases. As seen best in Figure 2, the gap 44 gradually increases toward the working space due to the inclined wall (near line 40). The other sealing lip contacts the sealing surface. The sealing member includes a core metal 30 and an elastic member 32. As seen in Figure 2, the free end face 40 has a width greater than that of the lip 36. The end face also has grooves 44.

3. Claims 1-5, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Otto (5,129,744).

Otto '744 discloses an assembly having an outer member 14 with raceways 12, and inner member 10 with raceways 16, rolling elements 18, and at least one sealing member D. The sealing member has a plurality of sealing lips 70 and 76 extending toward a sealing surface 42 on the inner member. One of the lips 76 extends axially inwardly of the working space and is a non-contact, labyrinth sealing lip leaving a gap 82 between a free end face and the sealing surface that permits air flow while preventing lubricant from exiting the working space and provides a labyrinth sealing effect under relative motion. The gap is also annular (because the edge of the lip never touches the shaft) and at portions, has a radial size that gradually increases. As seen in Figure 2, the gap increases toward the working space due the inclined surface (near line 80). The other sealing lip contacts the sealing surface. The sealing member includes a core metal (e.g. 64) and an elastic member. The free end face 78 has a width greater than that of the lip of 70. The end face also has grooves 80.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5, 8, 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Admitted Prior Art (APA) (spec. pages 1-3 and Figures 12, 13A, and 13B) in view of Otto.

Applicants disclose a known assembly comprising an inner member, outer member, rolling elements, and at least one sealing member. The sealing member comprises plural lips

Art Unit: 3673

extending toward either an L-shaped contact member 45 (Fig. 13B) or toward an inner member having a flange 32 (Fig. 13A). Applicants do not disclose that an innermost lip is a non-contact sealing lip. Otto teaches an assembly comprising an inner member, outer member, rolling elements, and at least one sealing member. The sealing member comprises plural lips. Otto teaches forming an axially innermost lip as a non-contacting lip. Otto teaches leaving a gap between a grooved free endface of the lip to pump lubricant back toward the bearing. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the axially innermost lip of admitted prior art with the teachings of Otto to pump or impel the lubricant back toward the bearing and improve the seal assembly.

6. Claim 1-5, 8, 9, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagase (6,168,315) in view of Otto.

Nagase discloses an assembly with an inner member, an outer member, plural rolling elements, and at least one sealing member. The sealing member has plural lips extending toward an L-shaped sealing contact member 26. The contact member 26 has a ring-shaped multi-pole magnet 34. Nagase does not disclose that an innermost lip (e.g. 41a) is a non-contact sealing lip. Otto teaches an assembly comprising an inner member, outer member, rolling elements, and at least one sealing member. The sealing member comprises plural lips. Otto teaches forming an axially innermost lip as a non-contacting lip. Otto teaches leaving a gap between a grooved free endface of the lip to pump lubricant back toward the bearing. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the axially innermost lip of Nagase with the teachings of Otto to pump or impel the lubricant back toward the bearing and improve the seal assembly.

Response to Arguments

7. Applicant's arguments filed 8/31, 9/29/06 have been fully considered but they are not persuasive.

The sealing member is considered to have a constant annular cross section in as much as Applicant's is. Further, the sealing member is annular. Thus, it has an annular cross section. Applicant argues the cylindrical face is not continuous. However, the claims do not require the sealing surface to be continuous/of constant dimension. Regarding claim 13, the gaps in Otto '548, and '315 are annular and have portions that gradually increase. Thus, they are considered to disclose the limitations as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alison K. Pickard whose telephone number is 571-272-7062.

The examiner can normally be reached on M-F (10-7:30), with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tricia Engle can be reached on 571-272-6660. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3673

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alison K. Pickard
Primary Examiner
Art Unit 3673

AP